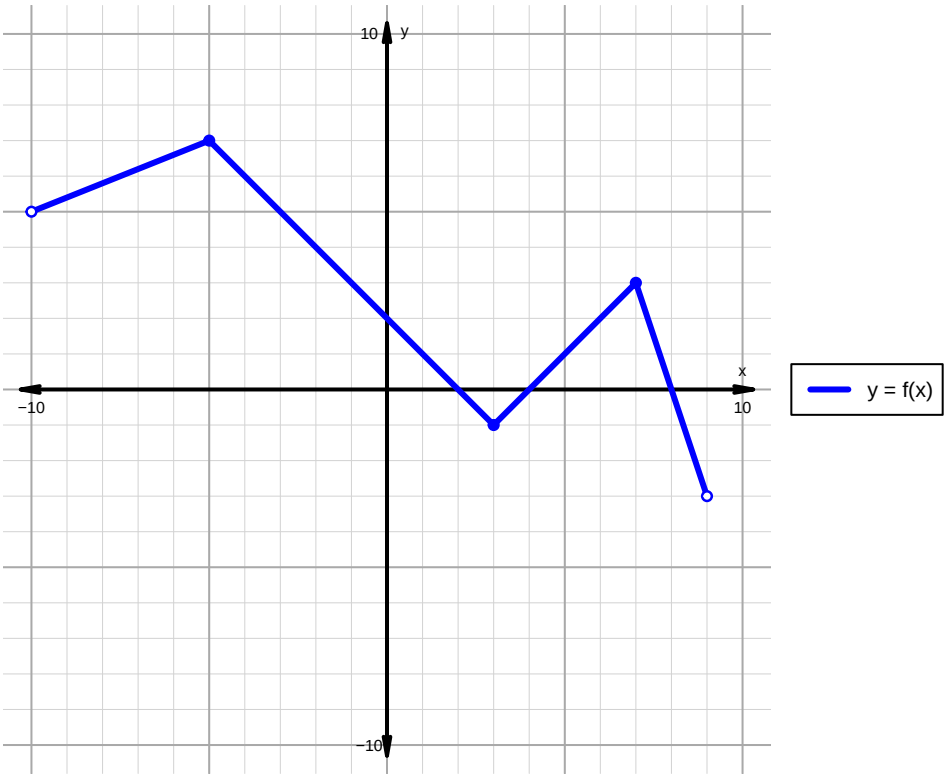
Name: Date:

Intervals, Transformations, and Slope Solution (version 130)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-10, 2) \cup (4, 8)$
Negative	$(2, 4) \cup (8, 9)$
Increasing	$(-10, -5) \cup (3, 7)$
Decreasing	$(-5, 3) \cup (7, 9)$
Domain	$(-10, 9)$
Range	$(-3, 7)$

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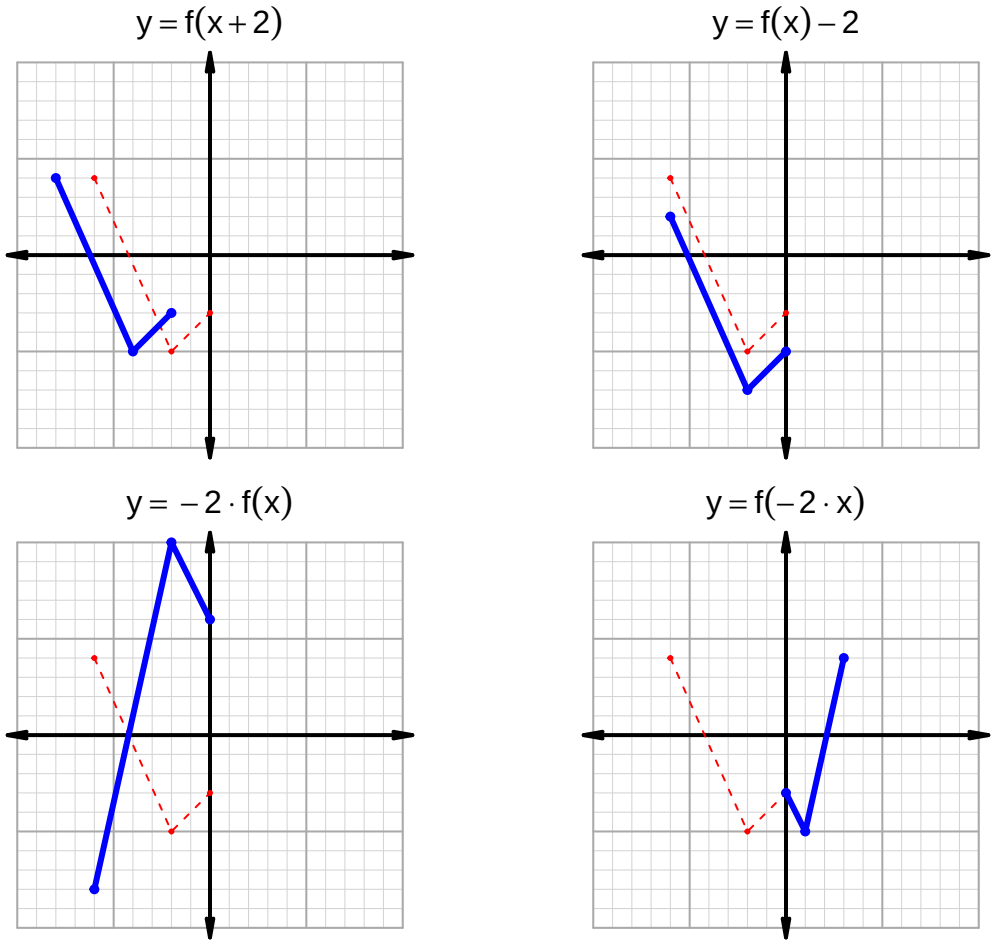
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 55$ and $x_2 = 83$. Express your answer as a reduced fraction.

x	$g(x)$
28	83
55	28
83	91
91	55

$\frac{f(83)-f(55)}{83-55} = \frac{91-28}{83-55} = \frac{63}{28}$

The greatest common factor of 63 and 28 is 7. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{9}{4}$$